Sink or Float (Sample Lesson)

Description:

This lesson is one example of how you can implement the practice of Investigating Science Through Inquiry. In this activity, students use everyday objects to make and test predictions about what sinks and what floats, charting their results on a graphic organizer.

Learning Goals:

1. Understand scientific inquiry through questioning, predicting, observing, recording and interpreting data, and communicating results
2. Keep records of scientific investigations using graphic organizers
3. Develop group work skills such as working together and listening

TN Curriculum Standards are addressed in this lesson. For example, the lesson meets the 5th grade standard in science for Embedded Inquiry (http://www.tennessee.gov/education/ci/sci/doc/SCI_Grade_5.pdf).

Materials:

1. Floating and sinking objects such as a rubber band, small bottles of shampoo, an orange, apple, carrot, leaf, twig, marble, nail, paperclip, pencil, rock, pumice stone, fishing sinkers, penny, crayon, floating toys (various boats, rubber duck), cans of cola (sugar free and regular), bar of soap, sponge, tennis ball, golf ball, ping pong ball, or ice cube.
2. Large aquarium or clear plastic container (students need to see inside the container.)
3. A copy of Sink or Float? By Lisa Trumbauer, Who Sank the Boat by Pamela Allen or other age-appropriate books about sinking and floating

Preparation:

1. Collect or ask students to bring in a variety of objects to test.
2. Make copies of the Graphic Organizer (PDF). If students use objects other than those pictured in the graphic organizer provided, make drawings or cut out illustrations to represent items to be tested,
3. Collect books on sinking and floating.
4. Collect pictures of large boats and other things that float, animals and people in water, sunken treasure, etc.

What to Do:

1. Engage students. Introduce the study of sinking and floating by asking the students what they know about things that sink and float, and why some things sink and other things float. Record their statements on a large KWL chart.
2. Read aloud the story Sink or Float? By Lisa Trumbauer, Who Sank the Boat by Pamela Allen, or a similar age-appropriate book. Ask questions about the illustrations to keep students engaged and to see what they know about why things sink or float.
3. Explore which items sink and which objects float. In a large group, hold up an item so that all the students can see it, pass it around for students to feel, and ask them to predict if the item will sink or float. Ask older students to draw a picture or label

the item and write their prediction. Have one student experimenter (rotate role) place the object into the water.

4. Explain the results. As each item is tested, ask students to complete their graphic organizers. After several items have been tested, ask students to think about what makes some things sink and others float.
5. Extend learning if time allows. Incorporate technology,literature, art, and writing by asking students to write a short story or create a drawing about sinking and floating. Use a large plastic children's pool and test larger objects such as balls of different sizes. For older students, construct boats out of clay or aluminum foil and test how much the boats will hold before they sink. Consider extending the study of sinking and floating for students ages 9 to 11 by including buoyancy and density studies.

Evaluate (Outcomes to Look For):

1. Student participation and engagement
2. Students' ability to make and test predictions
3. Answers that reflect an understanding of which objects sink and which float, including putting the object in the right place on the graphic organizer
4. An understanding of why some objects float while others sink

This lesson was borrowed from the SEDL Afterschool website (http://www.sedl.org/afterschool).